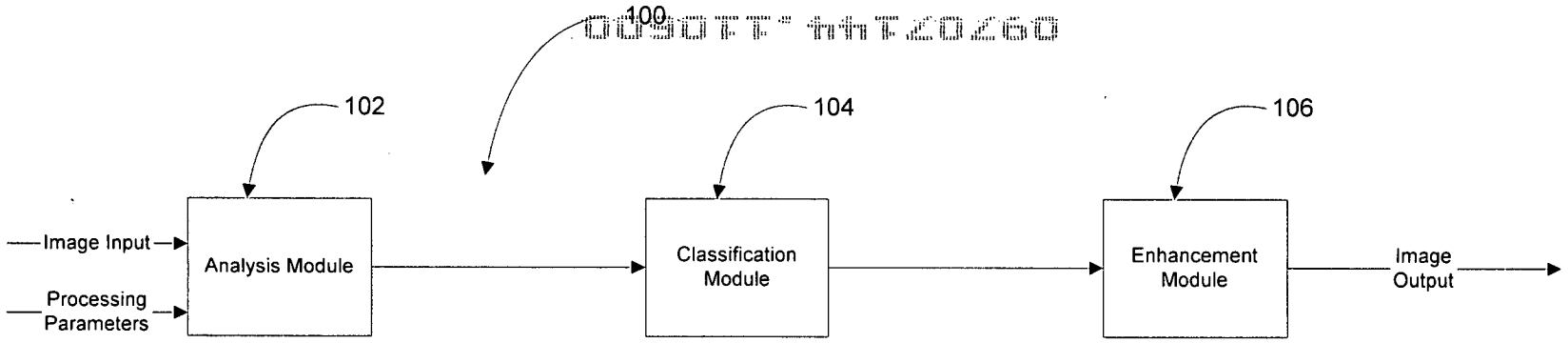
100
102
104
106
Image Input
Processing Parameters
Analysis Module
Classification Module
Enhancement Module
Image Output

Fig. 1

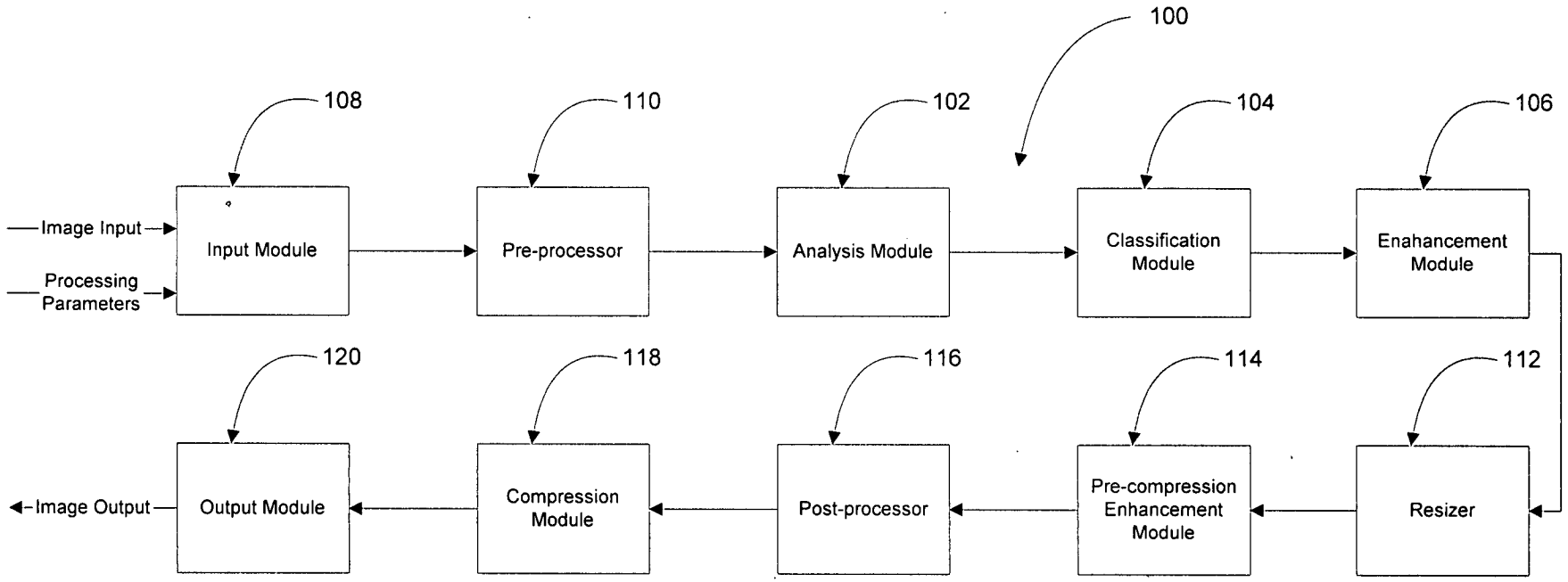
100
108
110
102
104
106
Image Input
Processing Parameters
Input Module
Pre-processor
Analysis Module
Classification Module
Enahancement Module
120
118
116
114
112
Image Output
Output Module
Compression Module
Post-processor
Pre-compression Enhancement Module
Resizer

Fig. 2

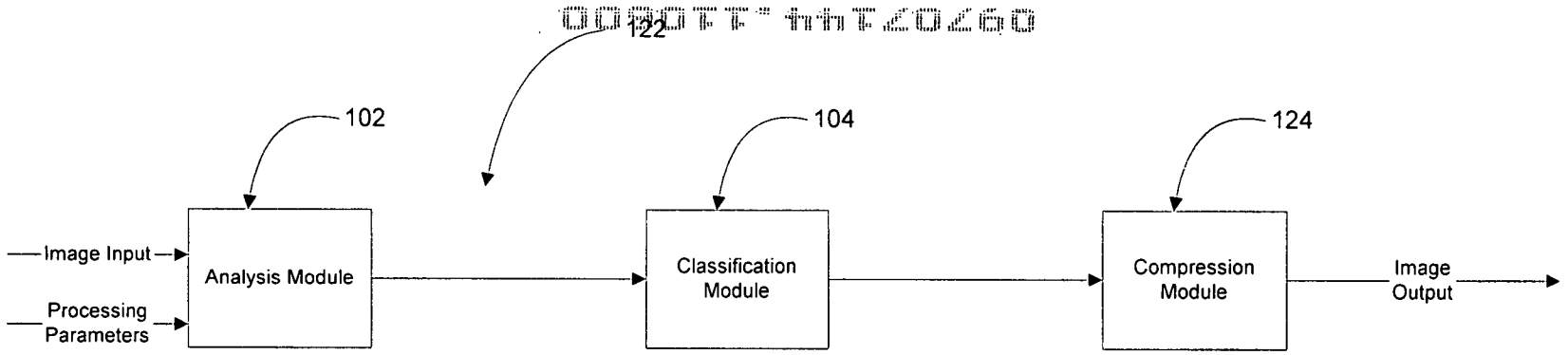
122
102
104
124
Image Input
Processing Parameters
Analysis Module
Classification Module
Compression Module
Image Output

Fig. 3

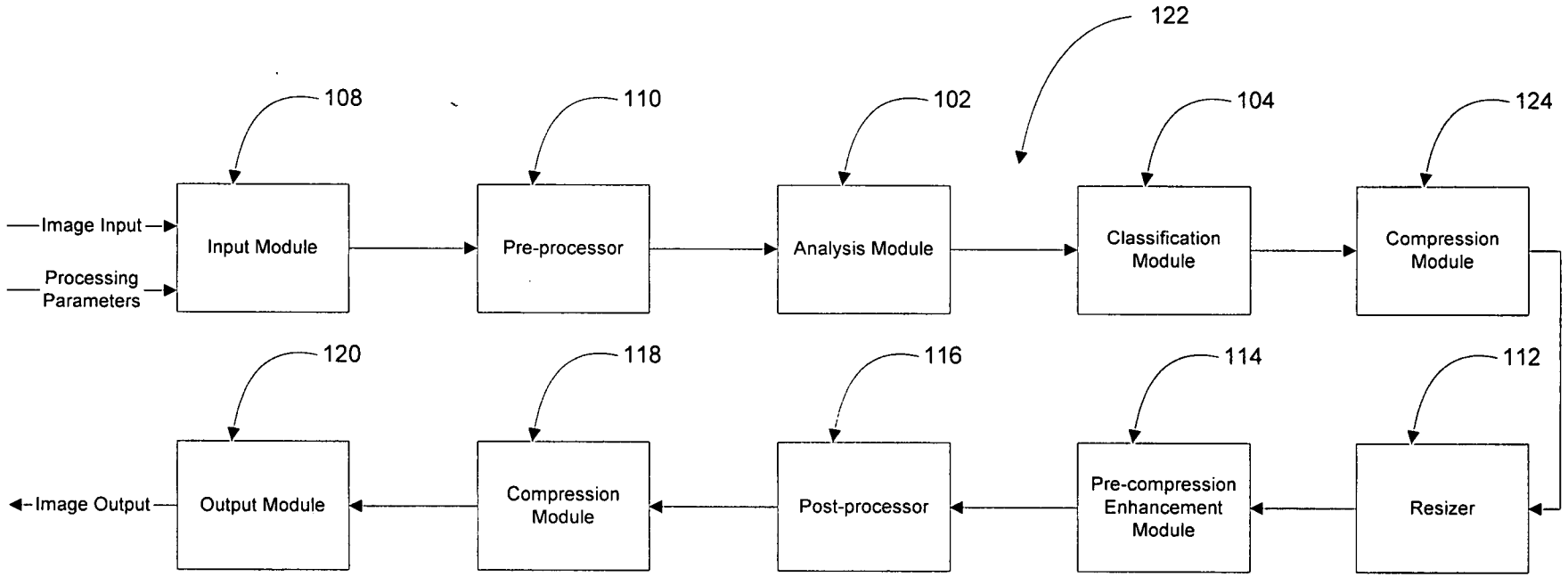
122
108
110
102
104
124
Image Input
Processing Parameters
Input Module
Pre-processor
Analysis Module
Classification Module
Compression Module
120
118
116
114
112
Image Output
Output Module
Compression Module
Post-processor
Pre-compression Enhancement Module
Resizer

Fig. 4

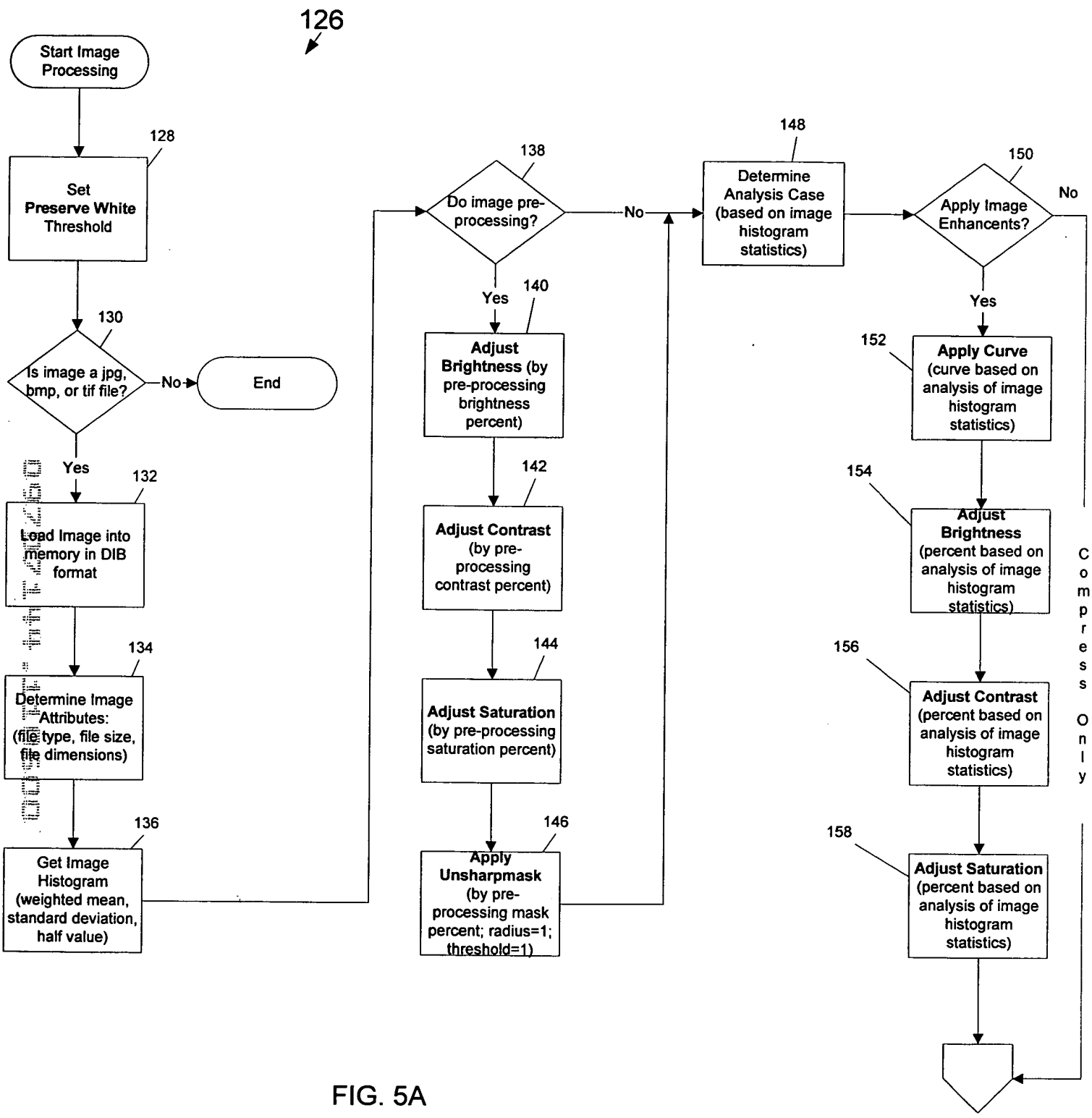
126
Start Image Processing
128
Set Preserve White Threshold
130
Is image a jpg, bmp, or tif file?
No
End
Yes
132
Load Image into memory in DIB format
134
Determine Image Attributes: (file type, file size, file dimensions)
136
Get Image Histogram (weighted mean, standard deviation, half value)
138
Do image pre-processing?
No
Yes
140
Adjust Brightness (by pre-processing brightness percent)
142
Adjust Contrast (by pre-processing contrast percent)
144
Adjust Saturation (by pre-processing saturation percent)
146
Apply Unsharpmask (by pre-processing mask percent; radius=1; threshold=1)
148
Determine Analysis Case (based on image histogram statistics)
150
Apply Image Enhancents?
No
Yes
152
Apply Curve (curve based on analysis of image histogram statistics)
154
Adjust Brightness (percent based on analysis of image histogram statistics)
156
Adjust Contrast (percent based on analysis of image histogram statistics)
158
Adjust Saturation (percent based on analysis of image histogram statistics)
Compress Only

FIG. 5A

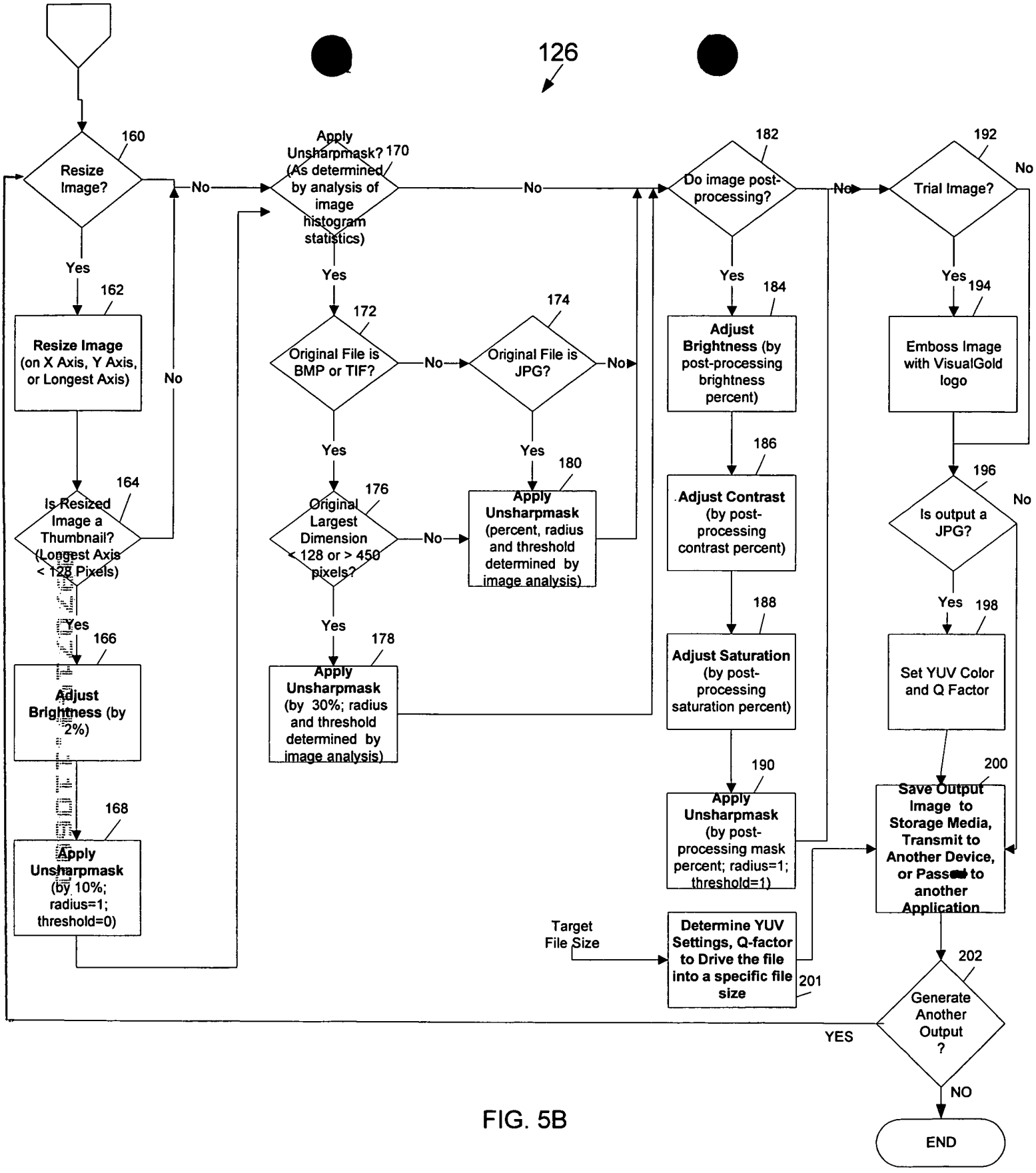
126
160
Resize Image?
No
Yes
162
Resize Image (on X Axis, Y Axis, or Longest Axis)
164
Is Resized Image a Thumbnail? (Longest Axis < 128 Pixels)
No
Yes
166
Adjust Brightness (by 2%)
168
Apply Unsharpmask (by 10%; radius=1; threshold=0)
Apply Unsharpmask? (As determined by analysis of image histogram statistics)
170
No
Yes
172
Original File is BMP or TIF?
No
Yes
174
Original File is JPG?
No
Yes
176
Original Largest Dimension < 128 or > 450 pixels?
No
Yes
178
Apply Unsharpmask (by 30%; radius and threshold determined by image analysis)
180
Apply Unsharpmask (percent, radius and threshold determined by image analysis)
182
Do image post-processing?
No
Yes
184
Adjust Brightness (by post-processing brightness percent)
186
Adjust Contrast (by post-processing contrast percent)
188
Adjust Saturation (by post-processing saturation percent)
190
Apply Unsharpmask (by post-processing mask percent; radius=1; threshold=1)
Target File Size
Determine YUV Settings, Q-factor to Drive the file into a specific file size
201
192
Trial Image?
No
Yes
194
Emboss Image with VisualGold logo
196
Is output a JPG?
No
Yes
198
Set YUV Color and Q Factor
200
Save Output Image to Storage Media, Transmit to Another Device, or Pass to another Application
202
Generate Another Output ?
YES
NO
END

FIG. 5B

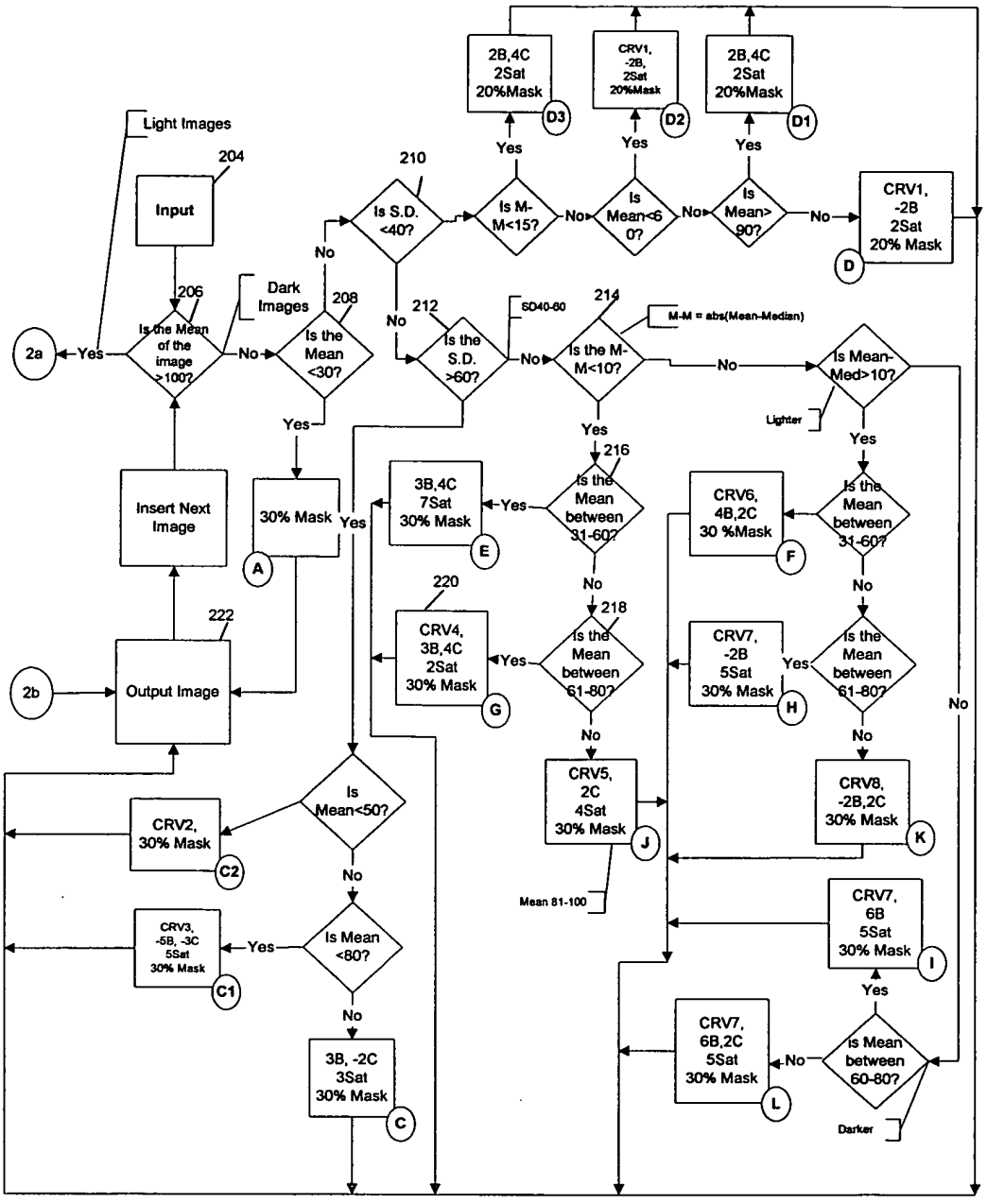
Light Images
Input
204
206
Is the Mean of the image >100?
Yes
2a
No
Dark Images
208
Is the Mean <30?
Yes
No
210
Is S.D. <40?
No
212
Is the S.D. >60?
No
SD40-60
214
Is the M-M<10?
No
M-M = abs(Mean-Median)
Is Mean-Med>10?
Lighter
Yes
Yes
Is M-M<15?
No
Is Mean<60?
No
Is Mean>90?
No
CRV1, -2B 2Sat 20% Mask
D
Yes
2B,4C 2Sat 20%Mask
D3
Yes
CRV1, -2B, 2Sat 20%Mask
D2
Yes
2B,4C 2Sat 20%Mask
D1
Insert Next Image
30% Mask
Yes
A
3B,4C 7Sat 30% Mask
Yes
E
216
Is the Mean between 31-60?
Yes
No
CRV6, 4B,2C 30 %Mask
F
Is the Mean between 31-60?
No
220
CRV4, 3B,4C 2Sat 30% Mask
Yes
G
218
Is the Mean between 61-80?
Yes
No
CRV7, -2B 5Sat 30% Mask
Yes
H
Is the Mean between 61-80?
No
No
222
2b
Output Image
Is Mean<50?
CRV2, 30% Mask
C2
No
CRV3, -5B, -3C 5Sat 30% Mask
Yes
C1
Is Mean <80?
No
3B, -2C 3Sat 30% Mask
C
CRV5, 2C 4Sat 30% Mask
J
Mean 81-100
CRV8, -2B,2C 30% Mask
K
CRV7, 6B 5Sat 30% Mask
I
Yes
CRV7, 6B,2C 5Sat 30% Mask
L
No
is Mean between 60-80?
Darker

FIG. 6A

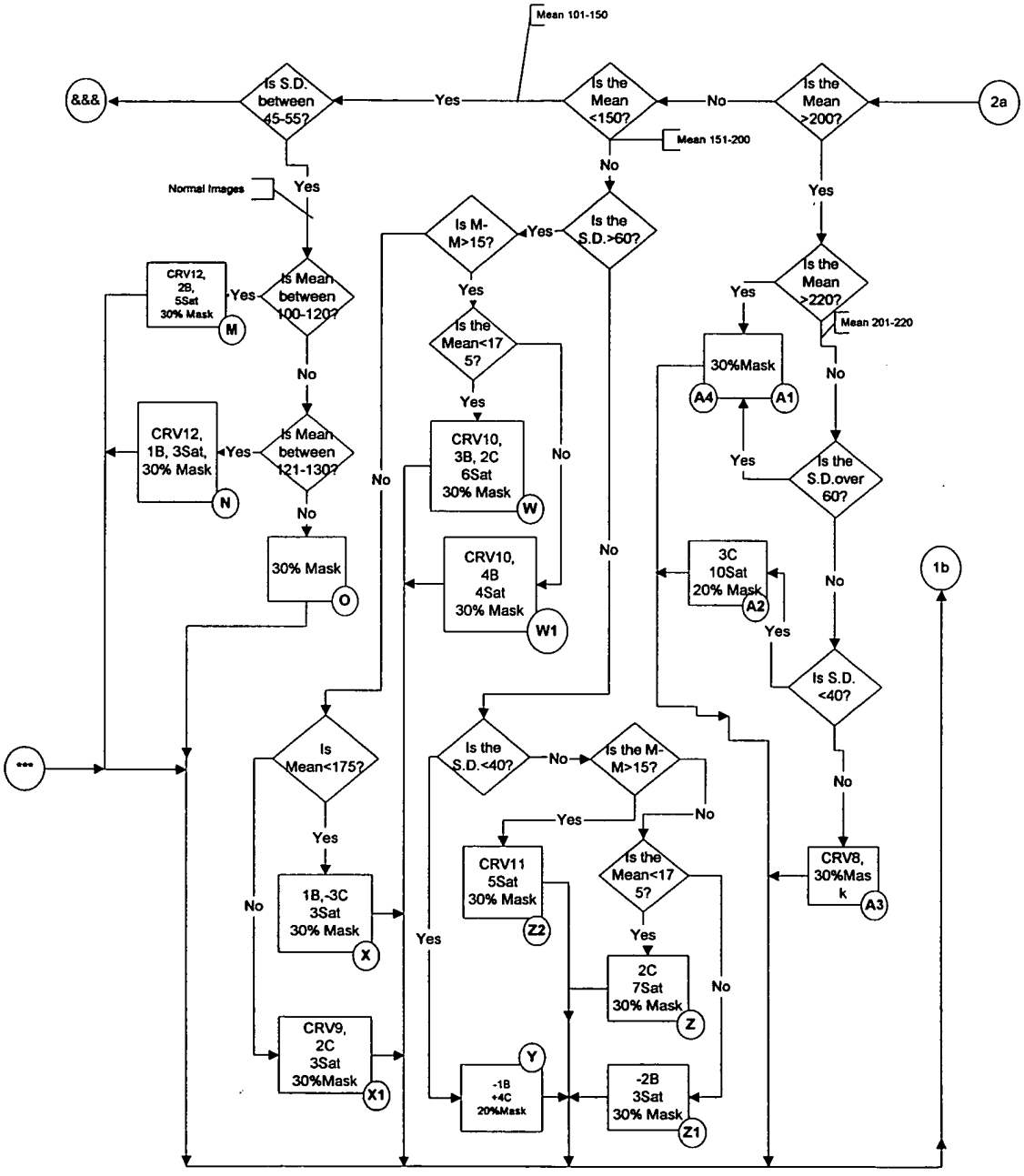
Mean 101-150
&&&
Is S.D. between 45-55?
Yes
Is the Mean <150?
No
Is the Mean >200?
2a
Mean 151-200
Normal Images
Yes
No
Yes
Is M-M>15?
Yes
Is the S.D.>60?
Is the Mean>220?
Yes
Mean 201-220
CRV12, 2B, 5Sat 30% Mask
M
Yes
Is Mean between 100-120?
Is the Mean<175?
30%Mask
A4
A1
No
No
Yes
Yes
CRV12, 1B, 3Sat, 30% Mask
N
Yes
Is Mean between 121-130?
CRV10, 3B, 2C 6Sat 30% Mask
W
No
No
Is the S.D.over 60?
No
30% Mask
O
CRV10, 4B 4Sat 30% Mask
W1
3C 10Sat 20% Mask
A2
1b
Yes
Is S.D. <40?
***
Is Mean<175?
Is the S.D.<40?
No
Is the M-M>15?
No
No
Yes
Yes
Yes
CRV11 5Sat 30% Mask
Z2
Is the Mean<175?
CRV8, 30%Mask
A3
1B,-3C 3Sat 30% Mask
X
No
Yes
Yes
2C 7Sat 30% Mask
Z
No
CRV9, 2C 3Sat 30%Mask
X1
Y
-1B +4C 20%Mask
-2B 3Sat 30% Mask
Z1

FIG. 6B

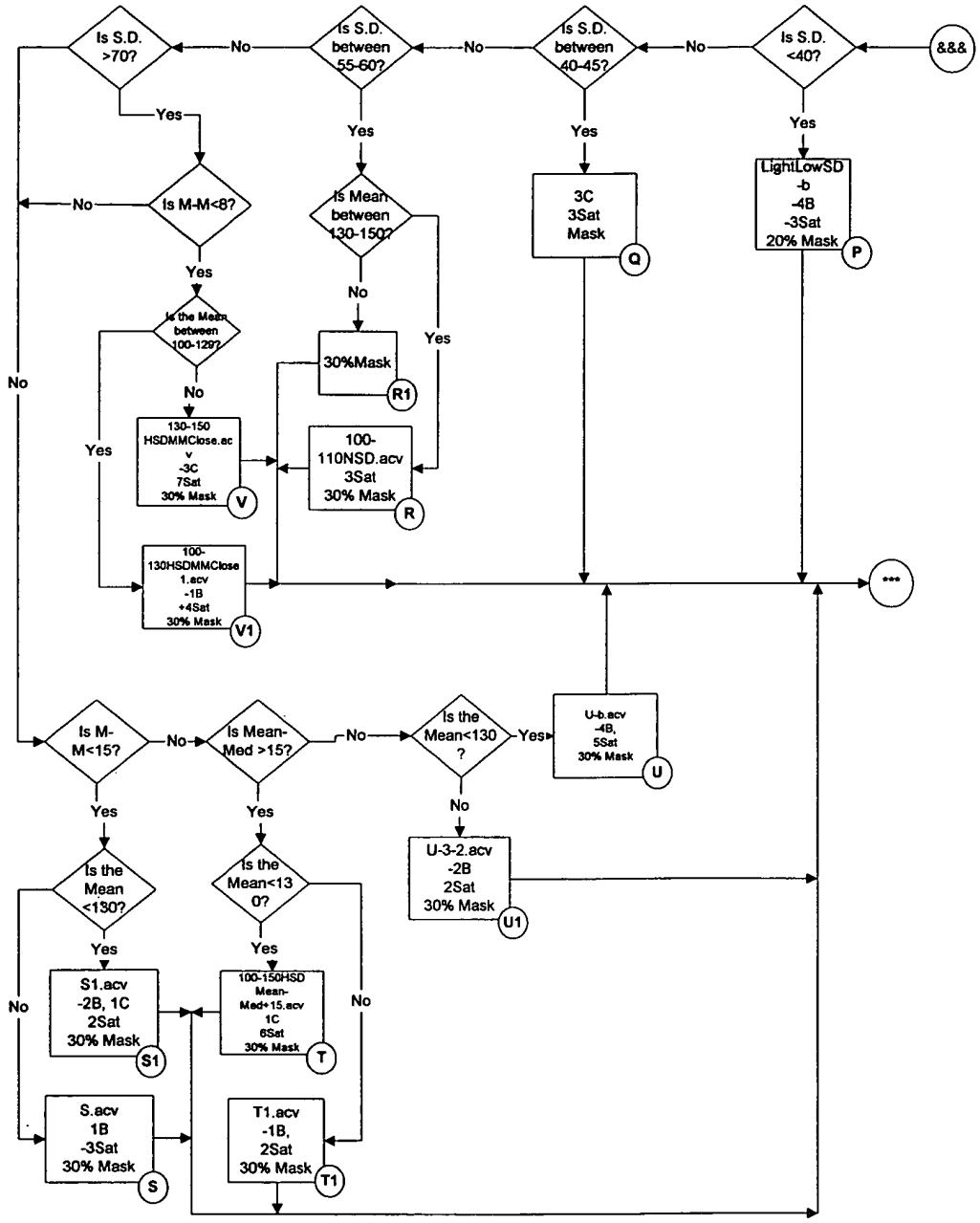
Is S.D. >70?
No
Is S.D. between 55-60?
No
Is S.D. between 40-45?
No
Is S.D. <40?
&&&
Yes
Yes
Yes
Yes
LightLowSD -b -4B -3Sat 20% Mask
P
3C 3Sat Mask
Q
Is M-M<8?
No
Yes
Is Mean between 130-150?
No
Yes
Is the Mean between 100-129?
No
Yes
30%Mask
R1
130-150 HSDMMClose.acv -3C 7Sat 30% Mask
V
100-110NSD.acv 3Sat 30% Mask
R
100-130HSDMMClose1.acv -1B +4Sat 30% Mask
V1
***
Is M-M<15?
No
Is Mean-Med >15?
No
Is the Mean<130 ?
Yes
U-b.acv -4B, 5Sat 30% Mask
U
Yes
Yes
No
U-3-2.acv -2B 2Sat 30% Mask
U1
Is the Mean <130?
Is the Mean<130?
Yes
Yes
S1.acv -2B, 1C 2Sat 30% Mask
S1
100-150HSD Mean-Med+15.acv 1C 6Sat 30% Mask
T
No
No
S.acv 1B -3Sat 30% Mask
S
T1.acv -1B, 2Sat 30% Mask
T1

FIG. 6C

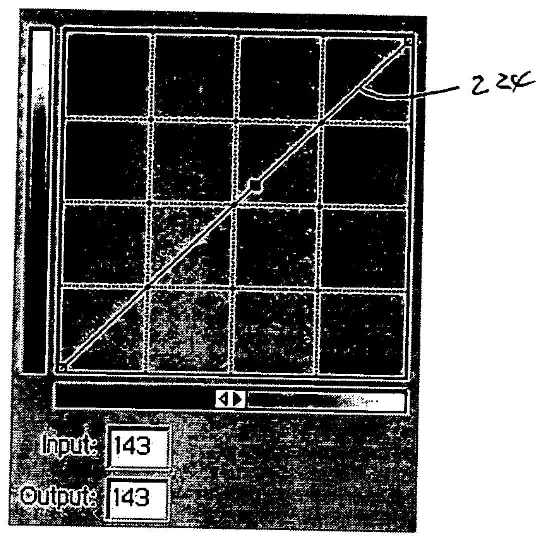

Fig. 7A

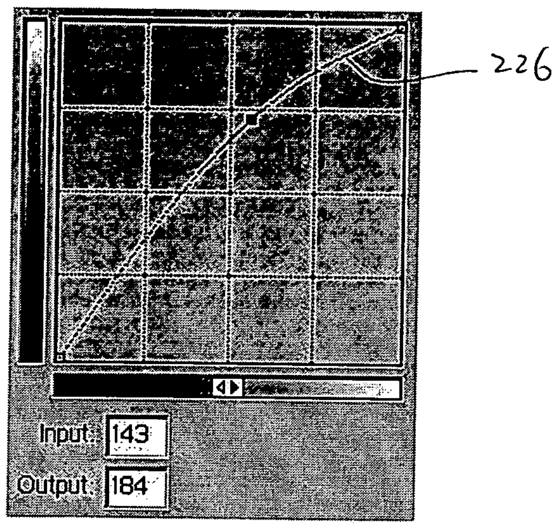

Fig. 7B

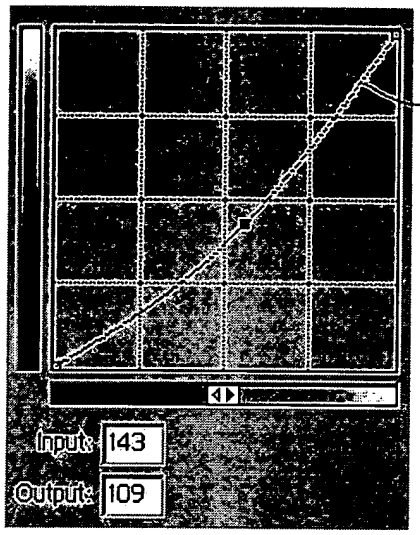

Fig. 7C